AMENDMENT OF SOLICITATION/MODIFICATION OF CONTRACT

1. CONTRACT ID CODE	PAGE OF PAGES
J	1 22

2. AMENDMENT/MODIFICATION NO.	3. EFFECTIVE DATE	4. REQUISITION/PURCHASE REQ. NO.	5. PROJECT NO.(If applicable)
0001	01-Feb-2007		

6. ISSUED BY	CODE	7. ADMINISTERED BY (If other than item 6)	CODE
AFGHANISTAN ENGINEER DISTRICT US ARMY CORPS OF ENGINEERS KABUL APO AE 09356	W917PM	See Item 6	

8. NAME AND ADDRESS OF CONTRACTOR (No., Street, County, State and Zip Code)		
	X	9A. AMENDMENT OF SOLICITATION NO. W917PM-07-R-0003
	X	9B. DATED (SEE ITEM 11) 29-Jan-2007
		10A. MOD. OF CONTRACT/ORDER NO.
		10B. DATED (SEE ITEM 13)
CODE FACILITY CODE		

11. THIS ITEM ONLY APPLIES TO AMENDMENTS OF SOLICITATIONS

[X] The above numbered solicitation is amended as set forth in Item 14. The hour and date specified for receipt of Offer [ ] is extended, [X] is not extended.

Offer must acknowledge receipt of this amendment prior to the hour and date specified in the solicitation or as amended by one of the following methods: (a) By completing Items 8 and 15, and returning 1 copies of the amendment; (b) By acknowledging receipt of this amendment on each copy of the offer submitted; or (c) By separate letter or telegram which includes a reference to the solicitation and amendment numbers. FAILURE OF YOUR ACKNOWLEDGMENT TO BE RECEIVED AT THE PLACE DESIGNATED FOR THE RECEIPT OF OFFERS PRIOR TO THE HOUR AND DATE SPECIFIED MAY RESULT IN REJECTION OF YOUR OFFER. If by virtue of this amendment you desire to change an offer already submitted, such change may be made by telegram or letter, provided each telegram or letter makes reference to the solicitation and this amendment, and is received prior to the opening hour and date specified.

12. ACCOUNTING AND APPROPRIATION DATA (If required)

13. THIS ITEM APPLIES ONLY TO MODIFICATIONS OF CONTRACTS/ORDERS. IT MODIFIES THE CONTRACT/ORDER NO. AS DESCRIBED IN ITEM 14.

[ ] A. THIS CHANGE ORDER IS ISSUED PURSUANT TO: (Specify authority) THE CHANGES SET FORTH IN ITEM 14 ARE MADE IN THE CONTRACT ORDER NO. IN ITEM 10A.

[ ] B. THE ABOVE NUMBERED CONTRACT/ORDER IS MODIFIED TO REFLECT THE ADMINISTRATIVE CHANGES (such as changes in paying office, appropriation date, etc.) SET FORTH IN ITEM 14, PURSUANT TO THE AUTHORITY OF FAR 43.103(B).

[ ] C. THIS SUPPLEMENTAL AGREEMENT IS ENTERED INTO PURSUANT TO AUTHORITY OF:

[ ] D. OTHER (Specify type of modification and authority)

E. IMPORTANT: Contractor [ ] is not, [ ] is required to sign this document and return _____ copies to the issuing office.

14. DESCRIPTION OF AMENDMENT/MODIFICATION (Organized by UCF section headings, including solicitation/contract subject matter where feasible.)

Time and date for receipt of proposals is amended to be not later than 5:00 PM 3 March 2007.

RFP Section 01010 Paragraph 2.26 is amended to provide requirement for Battalion Storage Building.

Except as provided herein, all terms and conditions of the document referenced in Item 9A or 10A, as heretofore changed, remains unchanged and in full force and effect.

15A. NAME AND TITLE OF SIGNER (Type or print)		16A. NAME AND TITLE OF CONTRACTING OFFICER (Type or print) TEL: EMAIL:	
15B. CONTRACTOR/OFFEROR (Signature of person authorized to sign)	15C. DATE SIGNED	16B. UNITED STATES OF AMERICA BY (Signature of Contracting Officer)	16C. DATE SIGNED 01-Feb-2007

SECTION 00010 - SOLICITATION CONTRACT FORM

The required response date/time has changed from 01-Feb-2007 05:00 PM to 03-Mar-2007 05:00 PM.

SECTION 00800 - SPECIAL CONTRACT REQUIREMENTS

The following have been modified:
SECTION 01010

SECTION 01010
SCOPE OF WORK

1. GENERAL

1.1 The contractor shall perform work that consists of mine clearing, topographic survey, installation master planning, site demolition (as required), grading, design and construction of new buildings, construction of prime power plant and electrical distribution system, construction of a waste water treatment aerated stabilization pond and sanitary sewer system, solid waste transfer points, development of a raw water source (i.e. ground source water wells), installation of water well pumps, potable water booster pumps and associated controls, installation water distribution system, construction of water storage tanks, design and construction of data, voice and emergency communication system including centralized communications building and underground cable installed in duct banks system, provide range master planning, design and construction of multi-purpose training ranges, design and construct an asphalt concrete road network on a new base, POV and military parking areas, and construction of perimeter fencing (IAW AT/FP measures). Installation landscaping shall incorporate a storm water runoff plan and allow for proper site drainage, grading throughout the compound with drainage structures. Attached in Appendix is an existing site plan from a similar Afghanistan project is included for guidance only that shows the general relationships between facilities and is to be used only as an example in developing any master planning. (All Master Planning shall conform to this RFP). The contractor shall perform a geotechnical investigation as defined in Section 01015. An approved site grading and drainage plan shall be prepared prior to any construction. All utilities shall be complete and operational prior to occupancy. All requirements set forth in the Scope of Work, but not included in the Technical Requirements shall be considered as set forth in both, and vice versa. All work under this contract shall be completed in accordance with Tables 1.1 and 1.2. This table provides completion durations after the Notice to Proceed (NTP).

1.1.1 SITE SECURITY
The Contractor shall provide perimeter force protection security for the developing site. Security may include but is not limited to fence and private security guards. Perimeter security shall prevent unauthorized site access and provide safety protection to the Contractor’s work force and government personnel for the duration of the project. The Contractor is solely responsible for security; however, local police should be coordinated with regarding security.

1.1.2 LOCATION

All work in this contract is for the design and construction of ANA Brigade facilities at Jalalabad, Afghanistan. Approximate coordinates are:

Latitude: 34.526546 N
Longitude: 70. 349318 E

Latitude: 34.526414 N
Longitude: 70. 360210 E

Latitude: 34.517531 N
Longitude: 70. 349158 E

Latitude: 34.526414 N
Longitude: 70. 360050 E

Altitude: The Site has rolling hills. The elevation varies from approximately 621 (meters) to 650 (meters). See appendices for aerial of site.

1.2 The master plan site shall include layout of all option items and a planned future Mosque (785m2) to be master planned (in this contract). The contractor shall provide utility connections designed and sized for the future connection of these option items and Mosque facility in this contract. The Contractor shall provide water line, sewer line, electrical conduit, and communications conduit. All connections shall be within 1.5 meters of each option item and Mosque building site.

1.3 The Contractor shall provide and maintain all Field Office facilities, housing, equipment, vehicles, and servicing as defined in Section 01060, paragraph 1.22 Special Facilities and Services.

1.4 Work shall be executed in accordance with the Technical Requirements in Section 01015, all solicitation requirements and the attached schematic building layouts.

1.5 Government shall provide to the selected Contractor design schematics and specifications for Designs from a previous Brigade that the Contractor will need to supplement per RFP and Code Analysis during the design phase. These government-provided design schematics and specification documents are not at the100% design-stage for Jalalabad; they were developed and used for construction of similar Brigades elsewhere in Afghanistan, Note: Some buildings in Jalalabad Brigade are brand new and have no drawings available. The Contractor will need to design, redraw and edit as required to meet the requirements of this RFP. For the remainder of the facilities, the Contractor shall prepare complete designs and specifications for all buildings and systems for review and approval by the Government. All designs and specifications created by the Contractor shall become the property of the Government and may be used in the future by the Government for Construction of similar facilities without further compensation to the Contractor. The Contractor shall site-adapt the existing designs to assure that the designs reflect the requirements of this RFP, making all changes as required. Contractor shall provide all Design Analysis, Specifications and Working Drawings for the entire Brigade including options for the 35%, 65% 99% and 100%. In addition to printed full-sized copies, the Contractor shall provide electronic versions of all design documentation in AUTOCAD 2006 (version) to the AED in Kabul and the Residence Office. Files shall be arranged on a CD with each facility clearly identified as a separate subdirectory, with all files for that facility contained in that subdirectory. Each disk shall have an adhered printed label listing contents. Hand-written labels are unacceptable.

1.6 For planning purposes, the wells, storage capacity, water treatment and wastewater treatment facilities shall be designed to support occupancy of 4,000 personnel.

TABLE 1.1 WORK ITEMS

Base Bid Items

Work Item	Completion Dates-Days from NTP
1.2 COE Housing and Office Support	60 days Section 01060
2.1 Site Survey/Master Planning	60 days
2.2 Site Clearing/UXO/Demining	150 days
2.3 Water System	420 days
2.4 Sewer System	420 days
2.5 Force Protection Perimeter	150 days
2.6 DFAC Number 1	420 days
2.7 Prime Power Plant	420 days
2.8 Brigade & Garrison HQ Complex	420 days
2.9 Bachelor Officer Quarters (BOQ)	420 days
2.10 Infantry Battalion Complex (A)	450 days
2.11 Infantry Battalion Complex (B)	450 days
2.12 Infantry Battalion Complex (C)	450 days
2.13 Combat Support (CS) Battalion Complex	450 days
2.14 Combat Support Services(CSS) Battalion	450 days
2.15 Central Maintenance.	450 days
2.16 Central Receiving Warehouse	450 days
2.17 Communication Building	420 days
2.18 Training Building	420 days
2.19 Arms Storage Building	450 days
2.20 Ammo Supply Point (ASP)	450 days
2.21 Site Grading	450 days
2.22 Road Network	450 days
2.23 Helipad	450 days

TABLE 1.2 OPTION ITEMS

ORDER OF OPTION ITEMS HAS NOTHING TO DO WITH PRIORITY OF AWARD. SEE PART 3 – EXECUTION 3.1 SCHEDULE OPTION ITEMS MAY BE AWARDED
UP TO 200 DAYS AFTER NOTICE TO PROCEED

OPTION ITEMS	Completion Dates-Days from Award of Option
2.24 DPW Shop Building	340 days
2.25 Reception Center	340 days
2.26 NOT USED	
2.27 Detention Facility	340 days
2.28 Solid Waste collection/disposal	340 days
2.29 Anti Vehicle Trench	340 days
2.30 Embedded Training Team Compound	340 days
2.31 Interpreter Facilities	340 days
2.32 Fire Station	340 days
2.33 Community Center	340 days
2.34 Spare Parts	340 days
2.35 Medical Clinic	340 days
2.36 Sports Field with reviewing stand and soccer field (standard 400 meter track)	340 days
3.0 Training Ranges	340 days

2. BASE BID WORK ITEMS:

2.1 SITE SURVEY AND MASTER PLANNING
The Site Plan shall be approximately 700 meters X 1000 meters. Master Plan shall indicate 700 X 1000 meter site with 300 X 1000 meter expansion space, see attached map for grid coordinates in Appendix. The Contractor shall perform a geotechnical investigation as defined in Section 01015; perform a site topographic survey; prepare a Master Plan for the entire facility including siting optional items, and a complete Landscaping and Site Drainage Plan with existing grades, proposed grades, and building finished floor elevations. The Contractor shall not locate facilities in wadis, dry river beds or areas subject to flooding. The development of the master plan will include participation in a Planning Charette that will be conducted at the Afghanistan Engineer District (AED), Qalaa House in Kabul. The Charette shall be completed within 30 days of contract award. A 35% Concept Design and Master Plan review shall be conducted with the Contractor at the Qalaa House 30 days after completion of Charrette. Provide Master Planning to locate the Power Plant central and down wind and near the DFAC, and Toilet buildings and possibly up wind from the Maintance Facilities to provide Co-Generation per Section 01010 Paragraph 4.1.2. An existing site plan from a similar Afghanistan project is included for guidance only. A required site plan for this project will be designed per this RFP.

2.2 SITE CLEARING/UXO/DEMINING

2.2.1 The Contractor shall search, identify and clear all mines and unexploded ordnances (UXOs) from the entire site. The Contractor shall provide the Government a letter indicating that the site is clear of mines and UXOs and is available for construction operations to proceed. All mine and UXO clearing shall be done in accordance with the International Mine Action Standards (IMAS) and clearance shall be accomplished to the anticipated foundation depth. These standards can be found at http://www.mineactionstandards.org. Work will not commence in any area that has not been cleared. For any and all areas on or around the site, it is the responsibility of the Contractor to be aware of the risk of

encountering mines and UXOs and to take all actions necessary to assure a safe work area to perform the requirements of this contract. The Contractor assumes the risk of any and all personal injury, property damage or other liability, arising out of and resulting from any Contractor's action hereunder. In any case, the Contractor shall be responsible for locating and removing all mines and UXOs within the entire site. Once the mines and UXOs are identified, the Contractor shall place them in a safe and secure location in accordance with IMAS. This work shall proceed in phases, concurrently with other construction efforts as determined by the Contractor. If a UXO/mine is encountered after site clearance and during project construction, UXO/mine disposal shall be handled in accordance with Section 01015, Technical Requirements, paragraph 1.4.

Overall completion of this work item shall be 150 days after award. Initial site clearing shall be completed for the construction of the initial Base Camp, access, security fence and survey 60 days after the award. Secondary site clearing shall be completed for the first construction phase (Prime Power Plant, water system, Waste Water Treatment Plant, Facilities, and Brigade HQ areas) within 90 days after the award. This work shall proceed in phases, concurrently with other construction efforts. UXO and Demining shall also be provided on the road to the Ammunition Supply Point (ASP), the ASP site, located approximately 1.5 Km outside the Brigade site, the trash disposal site and the range road and ranges. Clearance beyond the first 90 days shall be coordinated with the Contracting Officers Representative (COR) in advance. See Appendix A.

2.3 WATER SYSTEM
Design and construct a water system to include development of a ground well water source; water well pumps and service booster pumps, chlorination and water storage tank(s) sized for the entire Master Plan of 4,000 occupants with one day of storage and one day of usage; and water distribution system to serve the entire installation including Master Plan with a minimum of 40 psi pressures throughout. Provide chain link fence and gates around entire water facility see Perimeter Fence Section 01015 paragraph 2.7.3 for construction.

2.3.1 INITIAL WATER SYSTEM
Provide sufficient water supply, chlorination and storage capacity to provide potable water supply to the Dining Facility, Temporary Construction Camp W/ Dining Facility,-COE Camp, and the Contractor Office within 90 days after award.

2.4 SEWER SYSTEM
Design and construct a sewer collection system to include an aerated stabilization pond system sized for the entire Master Plan of 4,000 occupants, effluent pond, and sewer piping with manholes and cleanouts.

2.5 FORCE PROTECTION PERIMETER

2.5.1 Base size is 700 meters X 1000 meters. Design and construct a Force Protection Perimeter Fence (3400 meters); approximately 1,600 meters of stone wall and 1,800 meters chain link fence. Provide two (2) gates minimum into compound; with guard towers at 400 meter maximum intervals. Provide a Guard House at each opening in the perimeter one at the main gate, one each corner, and one at the alternate gate; and a Reception Building at the main gate. See Section 01015 for additional Force Protection requirements.

2.5.1 GUARD TOWERS
Guard towers shall be provided at each corner and at all gates through the Force Protection Perimeter Fence/Wall and at 400 meter intervals maximum. Construction of guard towers shall be 200 mm

reinforced concrete, slab, walls, and ceiling. Provide metal roof and eves to match other buildings on the compound, with gutter and downspout to splash block. Guard towers shall be provided with general lighting and shall be fitted with a prison-grade 360-degree omni- directional searchlight. Provide built-in counters with two (2) file drawers and one (1) pencil drawer. Provide duplex receptacles shall be as required for general use. Provide red lights inside guard towers to maintain night vision for occupants. Area immediate outside vicinity of guard towers shall be provided with mud grate similar to what is provided at the barracks door and shall be sloped sufficiently drain away from the building. Guard Towers shall have a concrete foundation below the frost line. Guard Facility shall be provided with general illumination, Communication/Data and duplex receptacles. Provide wiring to Communication Building thru a loop to all guard towers and guard houses with a redundant feed to Communication Building. Provide a minimum of two comm. jacks to each tower. Provide built-in counter with 2 file drawers and pencil drawers. Windows shall be 13 mm laminated glass in heavy duty steel frames that open out and up. Provide arm on each side to lock in open position and provide cam latch to lock window in closed position. Provide seals on doors and windows to make dust tight. Provide remote lever controlled 45 million candlepower 500 watt prison grade search light roof mounted on each guard tower roof. Provide electric wall mounted split-pack heating and cooling units located on wall opposite fence. Provide bullet-resistant entry doors.

2.5.2 GUARD HOUSES

Guard House design shall be shall be 200 mm reinforced concrete, slab, walls, and ceiling. Provide metal roof and eves to match other building on compound. Provide metal roof and eves to match other building on compound. A general space shall be provided for two (2) guards within Guard House. Provide duplex receptacles shall be as required for general use. Provide red lights inside guard houses to maintain night vision for occupants. Windows shall be sliding 13 mm laminated glass in heavy duty sliding aluminum frames. All other spaces mentioned in the standard design shall be provided elsewhere within the site. Areas immediately outside vicinity of Guard House shall be provided with mud grate similar to what is provided at the barracks door and shall be sloped sufficiently drain away from building and pedestrian areas. Guard House shall have a concrete slab foundation below the frost line. Guard House shall be provided with general lighting and shall be fitted with a 360-degree omni directional searchlight and Communication/Data and duplex receptacles. Provide wiring to Communication Building thru a loop to all guard towers and guard houses with a redundant feed to Communication Building. Provide a minimum of two comm. jacks to each guard house. Provide built in counter with 2 file drawers and pencil drawers. Provide electric wall-mounted split-pack heating and cooling units. Area immediately outside vicinity of Guard House shall be lighted and provided bullet-resistant entry doors.

2.6 DINING FACILITY (DFAC NUMBER 1)

Supplement existing designs as required by RFP and construct a new DiningFacility (DFAC) 2,088 m^2 with 1512 m^2 Dining Room seating for 1,000 persons. Design shall be for an open-clear span facility (may have one row of columns in center of room), using insulated modular building construction with CMU walls 3 meters min A.F.F. All floors in building shall be terrazzo, except utility type rooms and buildings. Provide at front entry a concrete sidewalk and covered canopy to match roof construction, length 20 meters. The Training Building shall be located to one side of the DFAC with connecting canopy at door between column lines 6 and 7 for use during population surges. Exact layout will be confirmed at Design Charette. Walk-off grates shall be provided at all exterior doors with removable galvanized steel grates and dirt wells provide grate for boot cleaning. Size grate full door width by one (1) meter long. Provide 3 flag poles at main entry. The Contractor shall design and construct one (1) collection point suitable for solid waste disposal temporary storage area adjacent to the DFAC. This building shall be Pre-engineered Metal Building with upper wall and roof constructed of insulated metal panels. The lower walls shall be reinforced insulated CMU. See Appendix A for guide layout.

2.6.1 DINING FACILITY PROPANE STORAGE
Provide Propane Storage for four (4) weeks operation assuming all stoves are in operation at the highest fuel consumption rate. Provide full tanks when project is turned over to Client.

2.7 PRIME POWER PLANT
Design a Prime Power Plant building and site power distribution system for the entire Master Plan, including future growth. Generators shall be provided for on-site power. Provide refueling point adjacent to exterior stone wall and near a guard tower so tanker truck does not have to enter base. It is the Contractor's responsibility to calculate the full load requirements and determine the size of the generators necessary to provide total electrical power supply to the entire compound at full load. Number of generating units shall be based on N+1 principal. Where 'N' would represent number of units required to meet initial demand loads plus 20% spare capacity and '+1' would represent a spare generator available at all times. Provide an additional black-start generator, sized only to run and able to re-start the power plant in event of power failure. Black-start generator shall not be included in the base power requirement calculations (i.e., not counted in the N+1 calculations). Generators shall have fuel heaters for cold weather operation. Connect Generators to concrete foundation with vibration isolators. Provide a generator pad that dampens vibrations to the surrounding building. Contractor shall fill tanks full and refill at the end of testing before project turn over. Building type shall be
Pre-Engineered metal buildings with reinforced CMU walls.

2.7.1 Provide space in the prime power building for two (2) future generators to include all necessary equipment pads and connection conduits. Contractor to include bulk fuel storage capacity based on 4 week (28 days) full-load operation for current Master Planned capacity with provision to accommodate fuel storage for future generators based on paragraph 1.2 future buildings. After testing generators, Contractor shall provide a full supply of fuel to the tanks at the time of turnover to the Government. Provide switch gear for future connection to local power. All the fuel tanks will be inside a concrete reinforced wall and water tight wall to contain any fuel spillage. The volume of the concrete reinforced wall shall be 110% of the fuel tank capacity and shall be 600 mm above top of fuel tank. Provide a 50 mm diameter drain pipe with a valve thru the wall to drain water that may have cumulated inside after a rain. Provide chain link fence and gates around entire fuel storage facility see Perimeter Fence Section 01015 paragraph 2.7.3 for construction. Provide heavy duty hasp and locks at all fuel storage tanks and openings to prevent theft.

2.8 BRIGADE HQ. & GARRISON HQ. COMPLEX
Design and construct a combined Brigade HQ. & Garrison HQ. Capable of supporting 351 personnel. . (93 Officers will Billet at the BOQ). Complex shall consist of the following buildings: 3- "A" Type Barracks; 1- "D" Type Barracks; 1- Senior NCO Building; 1- Toilet/Shower Building; 1- Brigade Headquarters Building (552 m^2); 1- Garrison Headquarters Building, w Toilets 990 m^2 ; 1- Arms Storage Building; 1- Motor Pool with POL Storage Building; 1- Maintenance Garage (1395 m^2); 1- Refueling Point with 39,000 liters of diesel storage and 1,000 liters of MOGAS storage; 1- Solid Waste Collection Point; 6-Flagpoles. Note: Plan on combining Brigade Headquarters building and Garrison Headquarters building into one building with separate entrances. This will be finalized at the Charette.

2. 9 BACHELOR OFFICERS QUARTERS
Design and construct a Bachelor Officer Quarters complex with double loaded 1500 mm corridors built to the following space requirements. Provide housing for: (258) O1-O3 @ 14 m^2 double occupancy, with shared toilets; Shared toilets shall be grouped in one area on the corridor shall be constructed with a

toilet/shower/sink ratio of 7:1 for O1-O3. Provide housing for: (50) O4-O5 @ 14 m^2 single occupancy, with shared toilets; Shared toilets grouped in one area on the corridor shall be constructed with a toilet/shower/sink ratio of 4:1 for O4-O5. Provide housing foe: (3) O6-O8 one bedroom apartments with living room, private bath and closets @ 52 m^2 single occupancy. Provide electric wall mounted split-pack heating and cooling units with 52-inch ceiling fans. Provide a janitor room with a mop sink each building.

2. 10 INFANTRY BATTALION COMPLEX (A)
Design and construct a Infantry Battalion capable of supporting 651 personnel. (42 Officers will Billet at the BOQ). Complex shall consist of the following buildings: 4- "A" Type Barracks; 4- "B" Type Barracks; 1- Toilet/Shower Building; 1- Battalion Headquarters Building; w/Toilets 340 $m^{2;}$ 1- Arms Storage Building; 1- Battalion Storage Building; 1 – Motor Pool; 1- POL Storage Building; 1- Solid Waste Collection Point.

2.11 INFANTRY BATTALION COMPLEX (B)
Design and construct a Infantry Battalion capable of supporting 651 personnel. (42 Officers will Billet at the BOQ). Complex shall consist of the following buildings: 4- "A" Type Barracks; 4- "B" Type Barracks; 1- Toilet/Shower Building; 1- Battalion Headquarters Building; w/Toilets 340 $m^{2;}$ 1- Arms Storage Building; 1- Battalion Storage Building; 1 – Motor Pool; 1- POL Storage Building; 1- Solid Waste Collection Point.

2.12 INFANTRY BATTALION COMPLEX (C)
Design and construct a Infantry Battalion capable of supporting 651 personnel. (42 Officers will Billet at the BOQ). Complex shall consist of the following buildings: 4- "A" Type Barracks; 4- "B" Type Barracks; 1- Toilet/Shower Building; 1- Battalion Headquarters Building; w/Toilets 340 $m^{2;}$ 1- Arms Storage Building; 1- Battalion Storage Building; 1 – Motor Pool; 1- POL Storage Building; 1- Solid Waste Collection Point.

2.13 COMBAT SUPPORT (CS) BATTALION COMPLEX
Design and construct a CS Battalion Complex capable of supporting 496 personnel. (49 Officers will Billet at the BOQ). Consisting of the following buildings:
1-"A" Type Barracks; 2-"B" Type Barracks; 2 -"C" Type Barracks; 1-"D" Type Barracks; 1-Toilet/Shower Building; 1-Battalion Headquarters Building; 1-Battalion Storage Building; 1-Motor Pool with POL Storage Building; 1-Maintenance Garage w/ 3 bays (608 m^2); 1- Arms Storage Building; 1-Solid Waste Collection Point.

2.14 COMBAT SERVICE SUPPORT (CSS) BATTALION COMPLEX
Design and construct a CSS Battalion Complex capable of supporting 352 personnel. (43 Officers will Billet at the BOQ). . Consisting of the following buildings: 1 - "A" Type Barracks; 2- "B" Type Barracks; 2-"D" Type Barracks; 1- Battalion Headquarters Building, w/Toilets; 1- Battalion Storage Building; 1- Motor Pool with POL Storage; 1- Maintenance Garage w/ 3 bays (608 m^2); 1- Toilet/Shower Building; 1- Arms Storage Building; 1- Solid Waste Collection Point.

2.15 CENTRAL MAINTENANCE
Supplement existing designs as required and construct a Centralized Maintenance Area consisting of the following: 9-bay Maintenance Garage with cranes and pits (1,395 m^2); Motor Pool (13,100 m^2); POL Storage Building. Maintance Garage will be heated/cooled and provided with 52-inch ceiling fans. Building type shall be Pre-Engineered metal buildings with reinforced CMU walls. See Appendix A for layout.

2.16 CENTRAL RECEIVING WAREHOUSE

Construct a Central Receiving Warehouse (1,520 m2) Designs shall be for open bay facilities, using insulated modular construction with 3 meter CMU walls. Provide Split Pack Heat Cool Unit in office with 52-inch ceiling fan. Provide two 5 meter X 5 meter high roll-up doors. Provide two bollards at each roll-up door jamb. Building type shall be
Pre-Engineered metal buildings with reinforced CMU walls. See Appendix A for layout.

2.17 COMMUNICATIONS BUILDING

Design and construct a Communications Building and wiring system. Design shall be 200 mm reinforced CMU, as indicated on plans. Building shall have concrete slab with foundation below the frost line. Provide toilets with wall-mounted vitreous china sink; furnish soap dispensers, paper towel dispensers, robe hooks and toilet paper holders. Provide a janitor room with a mop sink. Janitor room and any room(s) with water may not contain any electrical panel boards, circuit breakers, UPS system, or communications equipment. Floor in Communication Equipment Room shall be raised floor. See Section 4.9 below and 01015 paragraphs 10 thru 10.3.2 for additional details and requirements. Provide HVAC system for entire building. Walls: Concrete walls below grade shall be waterproofed using a water stop, waterproofing adhered to concrete walls, with geo-cloth, gravel, and perforated drainage pipes sloped 2% to drain. See Appendix A for layout.

2.18 TRAINING BUILDING

Design and construct a 1,202 m^2 Training Building. Training Building shall have an auditorium/gymnasium. Four (4) offices (10 m^2 each) shall be provided. Provide 11 toilets and 6 sinks facilities shall be provided together with a janitor room with a mop sink, all toilets shall face north/south. Locate Training Building near the dining facility to accommodate surges in brigade population. Design shall be for an open-clear span facility, using insulated modular construction with CMU walls 3 meters min A.F.F. Building shall be heated and cooled. Provide Diesel Heat w/Evaporative Cooling and minimum 52-inch ceiling fans. Building shall have 5-meter high unobstructed ceiling space. Reconfigure Appendix A Plan, turn toilets and office spaces, 90 degrees and relocate them to the end of building (away from Dining Facility), and keep the double doors. Building type shall be Pre-Engineered metal buildings with reinforced CMU walls. See Appendix A.

2.19 ARMS STORAGE BUILDING

Construct Battalion Arms Storage Building (350 m2). Design using reinforced fully grouted CMU walls and partitions with insulated metal gable, and roof construction. Install vented louver in each storage area with 30 mm security bars @ 150 mm O.C. Install split-pack heated office with 52-inch ceiling fan. Provide wood racks for storing long arms. Provide two bollards at each roll-up door jamb. See Appendix A for layout

2.20 AMMUNITION SUPPLY POINT (ASP)

Design and construct an Ammunition Supply Point for an ANA Infantry Brigade. Facility shall be 187 square meters (7.62 meters (25 feet) by 24.5 meters (80 feet)]. Munitions Storage Igloo Type A, per Army Standard Magazine STO 33 15 74. The ASP shall be located remotely from the Garrison 1500 meters, and will consequently require a perimeter fence with concertina wire and security lighting, one guard house, one guard tower that allows for visibility in all four directions. See Appendix A.

2.20.1 ASP Guard tower shall be provided in a position and of sufficient height to view entire facility and surrounding area. Construction of guard tower shall be 200 mm reinforced concrete. Guard tower shall be provided with general lighting and shall be fitted with a 360-degree omni-directional searchlight. Provide built-in counter with 2 file drawers and 1 pencil drawer. Duplex receptacles shall be provided as required for general use. Provide red lights inside the guard tower to maintain night vision. Access will be by stairs. Area immediately outside the vicinity of guard hut shall be provided with an all-weather non-slip

surface and shall be graded to sufficiently drain away from the building. Building shall have a concrete slab with a foundation below the frost line. Facility shall be provided with general illumination, and Communication/Data and duplex receptacles. Provide wiring to Communication Building thru a loop to all towers and guard house with a redundant feed to Communication Building. Provide a minimum of two comm. jacks to each tower. Facility shall be provided with general lighting. Provide remote lever controlled 45 million candlepower 500 watt prison grade search light roof mounted on guard tower roof. Provide built in counter with 2 file drawers and pencil drawers (see comment above). Windows shall be 13 mm laminated glass in heavy duty steel frames that open out and up. Provide arm on each side to lock in open position and provide cam latch to lock window in closed position. Provide seals on doors and windows to make dust tight. Provide grate for boot cleaning. Entry doors to be bullet-resistant. Provide Split Pack Heat/Cool Unit.

2.20. 2 ASP Guard House design shall be shall be 200 mm reinforced concrete, as indicated on plans. A general space (1500 mm X 1500 mm) shall be provided for one (1) guard within the Guard House. Windows shall be 13 mm laminated glass in heavy duty steel frames that open out and up. Provide arm on each side to lock in open position and provide cam latch to lock window in closed position. Provide seals on doors and windows to make dust tight. All other spaces mentioned in standard design shall be provided elsewhere within the site. Areas immediately outside vicinity of guard hut shall be provided with an all-weather non-slip surface and shall be graded to sufficiently drain away from the building and pedestrian areas. Building shall have concrete slab with foundation below frost line. Facility shall be provided with general lighting and shall be fitted with a 360-degree omni directional searchlight, Provide red lights inside the guard house to maintain night vision. Communications/Data and duplex receptacles. Provide wiring to Communication Building thru a loop to all guard houses and guard tower with a redundant feed to Communication Building. Provide a minimum of two comm. jacks to each guars house. Provide built-in counter with 2 file drawers and 1 pencil drawer. Provide Split Pack Heat/Cool Unit. Area immediately outside the vicinity of guard house shall be lighted. Provide grate for boot cleaning. Entry doors to be bullet-resistant.

2.21. SITE GRADING AND DRAINAGE
Perform complete site grading and installation of all required drainage structures per the Site Landscaping and Drainage Plan that will be prepared as part of this scope of work.

2.22 ROAD NETWORK
Design and construct the road network connecting main road or highway to the main entrance of the compound, all roads within the compound, to the ASP, and to the Ranges. All roads shall be graded with a stone base with minimum width of roadway of 7 meters and the road network within the compound and connecting to the main road and shall have an asphalt surface; finished surface shall be 50 mm of asphalt with 50 mm ware course. Road construction shall include the installation of all required drainage structures.

2.23 HELIPAD
Design and construct a reinforced concrete helipad. The helipad shall be sited in accordance with safe minimum distances from all structures, and shall have an asphalt access road to the helipad. Helipad shall have a reinforced concrete landing surface with a 5 meter wide asphalt concrete apron on 4 sides of helipad, and shall be designed to accommodate a fully loaded CH-47 Chinook Helicopter.

OPTION ITEMS:

2.24 DPW BUILDING.

Supplement existing design as required and construct a DPW Shop Building 200 m^2.
The building will have Diesel Heat w/Evaporative Cooling. See Appendix A for layout.

2.25 RECEPTION CENTER
Design shall be 200 mm reinforced concrete, as indicated on plans. Building shall have concrete slab with foundation below the frost line. Provide Eastern style toilets with wall- mounted vitreous china sink; furnish soap dispensers, paper towel dispensers, robe hooks and toilet paper holders. Provide a janitor room with a mop sink. Finish in toilets shall be terrazzo floors and ceramic tile walls. Provide Split Pack Heat Cool Units for entire building. All floors in building shall be terrazzo. See Appendix A for layout

2.26 BATTALION STORAGE BUILDING
Construct Battalion Storage Building (800 m2). Design shall be for open bay facilities, provide 3 meter CMU walls and pre-engineered insulated building. Provide Split Pack Heat Cool Unit in office with 52-inch ceiling fan. Provide two 5 meter X 5 meter high roll-up doors. Building shall have 5 meter high unobstructed space. Provide two bollards at each roll-up door jamb. For full height chain link partitions. Building type shall be Pre-Engineered metal buildings with reinforced CMU walls. See Appendix A for layout.

2.27 DETENTION FACILITY
Provide and install Detention Facility for 10 detainees and office for 2 guards. Holding cells shall be designed for double occupancy with the following built in amenities:
Bunks attached to wall, eastern style toilets, shower, and lavatory. Entry shall be a sally port. Building shall be constructed with reinforced concrete floor, walls and ceiling, with a metal roof. Provide office space and Toilet with eastern style toilets, shower, lavatory, power, and comms for two guards. Provide lockers for four guards. All fixtures shall meet the current American Correction Association (ACA) standards. Provide Diesel Heat w/Evaporative Cooling. Building shall be 90 sq. meters min.

2.28 SOLID WASTE COLLECTION POINTS AND DISPOSAL SITE
Provide and install collection points for solid waste until it is picked up and removed to the landfill/burn site. Design and construct a landfill/burn site from base off the ASP or Range road.

2.29 ANTI VEHICLE TRENCH
Provide an anti-vehicle trench (3 meters wide X 2 meters deep) around perimeter of Brigade and Ammo Supply Point. Ditch shall be adjacent to all force protection fences and walls. Ditch shall be 5 meters from perimeter fences and walls. Design anti-vehicle trenches to drain and not hold water after rainfall.

2.30 EMBEDDED TRAINING TEAM COMPOUND (ETTC) FACILITES:
Near center of Brigade provide ETTC consisting of stone force protection wall with two separate 2400 mm steel gates, parking for 200 vehicles and a guard tower at each corner, all utilities water, sewer, and electricity shall be connected to base utilities. Provide electric wall mounted split-pack heating and cooling units at all facilities.

2.30.1 ETTC Facilities: All buildings shall be constructed of reinforced fully grouted CMU plastered walls, with metal roofs. Windows shall be 6 mm laminated glazing set in heavy duty aluminum frames. Barracks and toilet facilities shall be built separately for men and women (80% Men and 20% Women). Provide Barracks with double loaded corridors built to the following space requirements. Sleeping rooms for ten (10) Officers @15 m^2 net per sleeping area, one-hundred sixty-five (165) enlisted @ 7.5 m^2 net per sleeping area. Fifty (50) KBR personnel @ 7.5 m^2 net per sleeping area. Provide shower, sink and toilet facilities for 250 persons @ 1/10. Provide one (1) Moral, Welfare and Recreation (MWR) building @ 200 m^2. Provide Storage Building 100 m^2. Provide Laundry Room with industrial grade washers and

dryers for 250 persons @ 1/10. All ETTC facilities shall have split pack units, for air conditioning/heating. Walk-off grates shall be provided at all exterior doors with removable galvanized steel grates and dirt wells, size full door width by one (1) meter long. Provide 1 collection point for solid waste temporary solid waste storage. Provide Master Plan and space for expansion in camp for a total population of 450 trainers.

2.30.2 DFAC Number 2: Facility shall be a western style kitchen for ETTC forces in the compound with commercial grade tables and commercial grade metal stackable chairs for 120 occupants. Stoves and ovens shall be commercial electric. Kitchen shall be sized to prepare food for 250 people. This facility shall provide cafeteria-style feeding and a short order grill next to a heated serving line w/sneeze guard 8 meter length min. Provide toilets, (2 separate) hand wash area with a stainless steel 2 meter pot sink, food service with all stainless fixtures and shelves and prep sinks/tables, dry storage, walk-in freezer, walk-in refrigerator, stainless self-serve counter, beverage counter, self-service cold-drink refrigerator w/sliding doors, and loading dock. Dining facility shall be 400 m^2. minimum. Provide an adequate grease trap with clean out to collect discharge from the kitchen area prior to discharging into the sewer system. Provide at front entry a concrete sidewalk and covered canopy to match roof.

2.31 INTERPERTER FACILITES: Locate adjacent to the ETTC Facility. Provide separate compound consisting of stone force protection wall per Section 2.5 Force Protection Perimeter with two 2400 mm steel gates, all utilities water, sewer, and electricity shall be connected to base utilities. All floors in building shall be terrazzo, except utility type rooms and buildings. All buildings shall be constructed of reinforced fully grouted CMU with metal roofs. Provide Barracks with double loaded corridor built to the following space requirements; sleeping rooms for 50 Translators @ 7.5 m^2 net per sleeping area @ 600 m^2 minimum. Provide shower, sink and eastern toilet facilities for 50 persons @ 1/10 and a storage room for janitor supplies and mop sink. Provide one (1) Moral, Welfare and Recreation (MWR) Building @ 75 m^2. Provide 50 m^2 Office Space. Minimum. Walk-off grates shall be provided at all exterior doors with removable galvanized steel grates and dirt wells, size full door width by one (1) meter long. Provide electric wall mounted split-pack heating and cooling units at all facilities.

2.31.1 DFAC Number 3: Facility shall be a western style kitchen for ETTC forces in the compound with commercial grade tables and commercial grade metal stackable chairs for 30 occupants. Stoves and ovens shall be commercial electric. This facility shall provide cafeteria-style feeding and a short-order grill next to heated serving line w/sneeze guard. Kitchen shall be sized to prepare food for 50 people. Provide two public toilets, hand wash area, food service with all stainless fixtures and shelves, dry storage, walk-in freezer, walk-in refrigerator, stainless self-serve counter and beverage counter, stainless steel prep sinks and wash pot sinks and, self-service cold-drink refrigerator w/sliding doors and loading dock. Dining facility shall be 120 m^2 minimum size. All Interpreter facilities shall have split-pack units, air-conditioning/heating. Provide an adequate grease trap with clean out to collect discharge from the kitchen area prior to discharging into the sewer system. Provide at front entry a concrete sidewalk and covered canopy to match roof.

2.32 FIRE STATION
Design and construct a 520 m^2 Fire Station. Design shall be for an open bay facility, insulated modular construction with 4-meter overhead doors. Open bays will be provided with exhaust fans for summer ventilation. Provide living quarters with Offices, Sleeping Areas, and Toilets together with a janitor room with a mop sink, Class Room, Living Room, Kitchen, and Dining Room. Entire building will be provided Diesel Heat w/Evaporative Cooling with A/C in the living areas. All floors in building shall be terrazzo, except garage and utility-type rooms. Modify plan and provide second exit at end of the

corridor. Construct building using insulated prefabricated metal structure with CMU 2,000 mm A.F.F. Provide two bollards at each roll-up door jamb. See Appendix A for layout.

2.33 COMMUNITY CENTER
Supplement existing designs as required and construct the following 900 m2 Community Center: provide 3-meter clear ceiling height. The building will have Diesel Heat w/Evaporative Cooling. Building type shall be Pre-Engineered metal buildings with reinforced CMU walls. See Appendix A for layout.

2.34 SPARE PARTS
Contractor shall provide a six (6) months supply of all spare parts for all facilities and all systems as recommended by the various manufacturer's instructions. A set budget amount of $100,000 is to be included for this purpose including shipping. Prior to purchase, the Contractor shall forward a list of spare parts with pricing, by vendor, to the Government for approval by the COR.

2.35 MEDICAL CLINIC
Supplement existing design as required and construct a 900m2 medical clinic with similar layout per appendices. Clinic shall provide the following: Examination rooms, X-ray room, Film room, Eye exam, Orthopedic, Dental, Dental lab, Pharmacy, Medical records, Administration, Lobby/waiting, Conference, Offices, Electrical room, Medical storage, Emergency room, Laboratory, Toilets, Showers, Patient rooms, Patient Bay, Break room, Janitor closet with a mop sink and Storage area. All floors in building shall be terrazzo, except utility-type rooms or as required by UFC-4-510-01. Build using insulated modular construction; insulated prefabricated metal structure with CMU 3,000 mm A.F.F. Building shall have concrete slab with concrete foundation below the frost line. The structure will have a HVAC system for the entire building. Medical clinic shall be constructed to the standards specified in UFC 4-510-01: Military Medical Facilities. Provide four (4) covered ambulance parking spaces using prefabricated metal building. See Appendix A for Clinic layout.

2.36 SPORTS FIELD
Construct Sports Field with reviewing stand and soccer field (standard 400 meter asphalt track). Provide heavy-duty aluminum bleachers (seating for 320) with 10" wide aluminum seats with non-skid surface. All aluminum planks shall be furnished with smooth finish end caps that install easily with self-tapping screws. Framework understructure is heavy-duty galvanized steel with front and rear cross braces to stabilize frame. Understructure is robotic welded and hot dipped galvanized. Anchor entire assembly to concrete a foundation. See Appendix A for layout.

3.0 RANGES

3.1 General. The Contractor shall review the range design criteria, prepare a site map and range design for review and approval by the Contracting Officer. The ranges shall be constructed as an option to the contract.

3.2 TRAINING RANGES

Design layout, and construct, Training Ranges consisting of the following:

One (1) RPG Range: RPG Range with four (4), 10-meter wide firing positions. Targets will be placed by ANA personnel.

One (1) Pistol Range: Pistol Range with fifty (50), 3-meter wide firing positions for a total of 150 meters. Place target stands at 25 meters, 50 meters, and 100 meters. Contractor shall clear; level and grade smooth the range site.

One (1) Grenade Launcher Range: Grenade Launcher Range with fifty (50) firing positions, each 10 meters wide for a total firing line width of 500 meters. Target stands shall be placed at 25 meters, 50 meters and 100 meters.

One (1) Rifle Range: Basic Rifle Marksmanship Range with 50 firing positions, each 10 meters wide for a total firing line width of 500 meters. Target stands shall be placed at 25 meters, and 100 meters. Contractor shall clear; level and grade smooth the range site.

One (1) Heavy Machine Gun Range: A 12.7 mm machine gun range with eight (8), 10-meter wide firing positions. Targets will be placed by ANA personnel. Contractor shall clear; level and grade smooth the range site.

One (1) mm Mortar Range: A mortar range with firing positions for three (3) artillery or mortar pieces. Targets will be placed in the impact area by ANA personnel.

The site of the training range will be remotely located approximately 5km from the garrison site.

Each range shall be provided a control/observation tower with safety flagpole, covered bleachers, an ammunition breakdown and distribution building. The Contractor shall fill and grade the rifle range, machine gun range and pistol range site smooth. The firing lines for the rifle, machine gun and pistol ranges shall consist of a 1.25m high berm with a 2m plateau on top that is centered on the 0 meter line. The sides of the berm shall be cut at a 1:2 slope with walk-in fighting positions placed so the front edge of the fighting position is at the 0m line. 1m wide steps made of concrete, mortared rock, or timbers shall be placed into the side of the berm centered on the right firing lane limit of odd numbered lanes.

3.2.1 Range Support facilities – Observation Tower

At each range, design and construct a 4.8m^2 observation tower approximately 11m high (see drawing A-01, Appendix B as a guide). The tower shall be located approximately 15m behind the firing line in the center of the range.

3.2.2 Range Support Facilities - Ammunition Breakdown Building

At each range, design and construct a 3.8m x 6.1m structure on a reinforced concrete pad consisting of a 3m x 3.6m ammunition room and a 3.1m x 3.8m covered patio area. The ammunition room shall be constructed of reinforced CMU block walls with a continuous bond beam and have one steel entry door and two service windows with steel shutters. One service window shall face the patio area and the other shall open on the opposite side away from the patio. A sample floor plan, drawing A-09 is provided in Appendix B. Construct a total of four (4) facilities.

3.2.3 Range Support Facilities - Covered Bleachers

At each range, design and construct a roughly 5.2m high, 6m x 9.5m bleacher enclosure that will accommodate 200 people in two (2) sets of bleacher with 10 rows of seats. Each row shall be approximately 4.6m in length. The structure shall consist of a reinforced concrete slab with three sides

and a rough structure supported by 6 columns (see drawing A-10 in Appendix B). The back and sides shall have metal siding walls and the back shall also contain two (2) louvers for air flow.

Range diagrams (5T-1, 5T-2-1, 5T-2-2 and 5T-2-3), range facility example drawings and example range layout are included in Appendix B.

4. DESIGN GUIDE INFORMATION:

These design notes are intended to aid in preparation of design documents for new facilities and supplement the design of those facilities that have been previously constructed at other garrisons in Afghanistan.

4.1 UNIQUE SITE REQUIREMENTS:

4.1.1 The building design for the Jalalabad Garrison shall provide solar heating by orientating the buildings and wind breaks, insulation and exterior window shading techniques to reduce building heat loss and heat gain. Contractors shall include energy efficient heating and cooling solutions.

4.1.2 The building design for the Jalalabad Brigade shall provide co-generation Co-Gen using waste heat from the generators exhaust and radiator to make process hot-water for building heat and for domestic hot water (water-to water heat-exchanger) for all Toilet/ Shower Buildings, DFACS, Laundry, and for the Maintance Facilities. Systems shall be augmented by boiler for constant hot water supply as required. This will require Master Planning to locate the Power Plant central and down wind and near the DFAC, and Toilet buildings and possibly up wind from the Maintance Facilities. All Toilet/Shower Buildings shall be adjacent to the Battalions they serve. Domestic hot water shall be from Co-Gen process water-to-domestic water heat-exchanger. Provide domestic water heaters in all Toilet/Shower Buildings, DFACS, Laundry, and Maintance Facilities. Buildings which do not have Co-Gen hot-water-heat, and which require domestic hot water shall be supplied with electric hot-water-heaters.

The diesel engine electric generator (Gen-Set) rejected (waste) heat shall be recovered for facility space heating of all Toilet/Shower, DEFAC (Dining Facility), Laundry, Training, and Maintenance Buildings. The Contractor shall determine the heat required for all building sites, using winter -12 ‘C outside and 20 ‘C inside temperatures (d t = 32 ‘C). . The total Power-Plant electrical-load shall be calculated, so that an energy balance can be made to ensure sufficient waste-heat is available for the above building heat. Heating areas can be adjusted (electric vs. waste heat) to provide a balance between recovered-heat and electrical resistance (or heat-pump) heat.

Cogeneration heat-recovery shall use the diesel exhaust-gas through a Heat-Exchanger Vessel (Recovery Vessel) to produce hot-water which shall be piped to unit-heaters (hot-water-coils with electric-fan), or hot-water radiators in the buildings to be heated.
Domestic hot-water for lavatories and showers shall be heated by a process water-to-domestic water heat exchanger located near the point of use. The Power Plant Recovery-Vessel shall be sized to capture a minimum of 50% of the exhaust-gas-heat, and also sized as not to require tube cleaning for 3 years due to diesel exhaust gas fouling. The Recovery-Vessel and engine exhaust piping (including a muffler, if used) shall not exceed the engine’s maximum allowed back-pressure (usually 5 to 10 KPa). The Recovery-Vessel shall have an exhaust-gas damper (valve), to by-pass the recovery-exchanger when maximum heat is not required. If exhaust-gas heat recovery is insufficient, then a separate radiator-water-to-process-water heat-exchanger shall be used to capture the engine-radiator heat. This system must be designed in

conjunction with the diesel engine so that the jacket-water temperature stays within the engine's operating range, regardless of the recovered heat.

The recovered-heat distribution shall be by pumped circulating-loop process-hot-water (typically 90 to 70 'C) run in insulated steel pipes underground. All joints shall be welded with DC (Direct Current) welder and E6010 pipe-line electrodes. E6013 electrodes and AC welders are prohibited. Hot-Water flow rates shall be between 1.0 m/s (to reduce circuiting-pump size) and 3.0 m/s (to reduce temperature loss).

An example of diesel-engine heat recovery systems is shown on pages 25 to 31 of Caterpillar Electric Power Application and Installation Guide. Heat Recovery Systems are available from Caterpillar (G3516B 50 Hz).

Site Master Planning locate the Power-Plant (Recovery-Vessel) as central as possible to the users of recovered heat, taking into consideration exhaust fumes, noise, wind direction, and so forth.

4.1.3 All building with water supply shall have a water meter and shut off valve installed in a locked cabinet or closet area inside the building.

4.1.4 All building shall have a sloped metal roof, with metal eves, and soffits. See Section 01015 for roof specifications and warranty.

4.2 Barracks, Office, and Other habitable Buildings

The following notes shall be incorporated into the Barracks and Headquarters designs:
Barracks, HQ Building complexes and all habitable building shall be designed to accomplish the following:

a. Barracks shall be spaced far enough apart to minimize noise (minimum 15 meters between barracks). The spacing shall also be suitable for snow removal at entrances, where applicable, and allowing for green space (trees and scrubs) for all sites.

b.Barrack complexes shall be arranged to allow for common area (central plaza) for Battalion/Headquarters assembly.

c. Heating and cooling for all habitable buildings, which do not have co-gen (waste) heat, shall be by forced-air diesel-fired furnaces; and cooling by an integral evaporative-cooler. Co-gen heated buildings shall be cooled by separate evaporative-cooler Units. At least one Heat-Cool Unit for each separate structure, with multi Units for larger buildings Units shall be at least 80% efficient on heating cycle; and hot / cold air distributed by ducts, with a maximum air velocity of 10 m/s (2,000 fpm). Each Heat-Cool Unit shall be in the heating output range of 75 to 100 tkW (250 MBH to 340 MBH); and shall have an integral "day" diesel tank for 2 days of continuous firing. An example of a Diesel Heat & Evaporative Cool Unit is shown on AED drawing "ANA HEAT-COOL DESIGN-02" dated 04 DEC 06.

d. All habitable buildings shall be thermally insulated to R = 3.5 m2-'C/watt (R 20) for walls; and R = 5.5 m2-'C/watt (R 30) for roofs.

e. All Barracks buildings shall be designed as open bay structures, sized for 5 square meters gross per soldier. Barracks buildings will be heated by energy efficient suspended electric unit heaters. Full height non-load bearing partitions shall be provided between the Enlisted and NCO billeting, as shown on the

drawing. E9's and E8's shall have private rooms at 12 m2 net. E7's shall be double occupancy within 12 m2 rooms. All E1 – E6's shall sleep in open bays.

f. All barracks shall be of the standard size shown in the drawings.

g. All Barracks and building lighting shall be designed and constructed to provide a uniform level of minimum lighting in accordance with Section 01015 throughout the buildings. Fluorescent lighting shall be installed throughout barracks buildings.

h. Each Brigade Headquarters, Garrison Headquarters and Infantry Battalion Complex shall have a central toilet/shower facility with showers, toilets, and ablution/sinks, to be designed and constructed in each of the Complex-areas. The central toilet/shower facilities shall be sized to fit each complex see Paragraph i below for ratio, (see attached sketch as a guide only, sizes will vary) with a central changing area, open lockers, private bathing/showers, ablution, and toilets. The central toilet/shower facilities shall be designed with toilets facing North/South away from Mecca, for cultural reasons. Do not provide urinals for cultural reasons. Provide one central toilet/shower facility in each complex area as a separate stand alone building (not attached to a barracks building).

i. Provide the following Toilet/Shower/Sink Ratios for the facilities unless other wise noted (U.O.N)

Sink ratio	1:20
Shower Ratio	1:12
Toilet Ratio	1:20
Ablution Area	1:20

j. All toilets shall be eastern style with a wall-mounted faucet and spray hose.

k. Ablution areas shall contain hot and cold water spigots with a flexible 1.5m spray hose mounted below the control valves with a back flow prevented fitting at the hose bib and hanger. Ablution areas shall be provided with low flow water devices.

l. All sinks for the Brigade, Garrison, and Battalion HQ buildings and the central toilet/shower facilities shall be 1.8m wide trough type constructed poured in place concrete or filled concrete block with ceramic tile exterior and stainless steel lining capable of withstanding abuse. Maximum width is 1.8m. Individual troughs shall serve only three (3) individuals with 3 spigots with hot and cold water and two drains.

m. Reversible 3-speed motor ceiling fans (minimum 52-inch blades) shall be designed and installed barracks areas, one- and two-man bedrooms, apartments, dining rooms, supply and storage areas, classrooms and offices.

n. Clothes lines, 1 each, shall be installed behind each barracks approximately 5 meters in length with 4 lines across, spaced 41 cm apart and of sufficient strength to prevent sagging when all of the lines are loaded. Use metal "T" post with non-rust type clothes lines.

o. Showers shall contain a valve for hot and cold water mixing. There shall be a showerhead mounted high on the wall and an additional spigot with a flexible 1.5 m spray hose mounted below the control valves with a hanger. The showerhead and the spigot shall each have a valve so that flow can be diverted to each. Showers shall be provided with low flow water devices.

p. Provide at all Buildings with swinging doors: Walk-off grates shall be provided at all exterior doors with removable galvanized steel grates and dirt wells, size full door width by one (1) meter long. Provide a 150 mm wide steel boot scraper fixed in concrete to the side of each door for boot cleaning.

q. Air conditioning shall be provided for Brigade, Garrison, Battalion and Company HQ building offices complexes.

r. Install carbon monoxide (CO) monitors in large occupancy areas, sleeping areas and enclosed facilities. If all the windows and doors are closed and there is no provision for intake air, there is a possibility of carbon monoxide built up in the rooms. These CO monitors/alarms shall be hard-wired for reliability and to prevent pilferage.

s. All toilet rooms shall be designed with toilet fixtures facing North/South away from Mecca, for cultural reasons. Do not provide urinals for cultural reasons.

4.3 SITE

a. Install crushed #2 stone around all buildings 1,200 mm wide from building edge. Layout a system of paths between building and install 1,200 mm by wide crushed stone paths to reduce erosion and provide dust control.

b. Barracks shall be located no closer than 15 meters to each other.

c. Install 10 meter tapered metal flagpoles with bases constructed or 600 mm reinforced concrete; imbed 2000 mm, with s.s. pulleys top and bottom w/10 mm nylon line and 100 mm ball on top. Provide base hinge to tilt pole for maintance.

4.4 Warehouse Facilities

Construct Battalion Storage Building and Central Receiving warehouse facilities will be unheated except for offices. Design shall be for open bay facilities, provide 3 meter CMU walls and pre-engineered insulated building. Provide Split Pack Heat Cool Unit in office with 52-inch ceiling fan. Provide two 5 meter X 5 meter high roll-up doors. Building shall have 5 meter high unobstructed space. Provide two bollards at each roll-up door jamb. For full height chain link partitions. Building type shall be Pre-Engineered metal buildings with reinforced CMU walls. See Appendix A for layout.

Battalion Storage Buildings	800 m^2
Central Receiving Warehouse	1,520 m^2

4.5 Motor Pool Parking Areas

The following minimum space requirements shall apply to the motor pool parking areas:

Infantry Battalion Motor Pools	2,000 m^2
CSS Company Motor Pool	1,000 m^2
CS Company Motor Pool	1,000 m^2
Garrison Motor Pool	15,600 m^2
Brigade Motor Pool	1,500 m^2
Centralized Maintenance Area	13,100 m^2

4.6 Motor Pool and Vehicle Maintenance Facilities

The Motor Pool and Vehicle Maintenance facilities open areas will be designed with fan- driven hot-water heaters with hot water supplied and heat recovered from generators. Provide electric wall-mounted space heaters during times when Base is supplied with off-site power. Offices spaces shall have split unit HVAC heat pumps with both heating and cooling and 52-inch ceiling fans.

The following requirements shall apply to the motor pool and vehicle maintenance facilities:

a. Infantry, CS, and CSS Company Motor Pools, Central Maintenance Area, Brigade Motor Pool, and Garrison Motor Pool – Each Motor Pool shall have a small 5 m x 5 m building with two separate rooms for storage of vehicle fluids and tools. Provide dutch doors at all tool rooms with lock for both halves. Provide Diesel Heat w/Evaporative Cooling each building. Provide two bollards at each roll-up door jamb. All floors in building shall be sealed concrete.

b. Garrison Motor Pool – The Garrison Motor Pool Area shall have a refueling point with storage capacity of 38,000 liters diesel in two tanks, and 1,000 liters of MOGAS with underground storage. Provide refueling point near exterior stone wall and near a guard tower so tanker truck does not have to enter base.

c. Maintenance Garages – 1,356 m^2 Maintenance Garages shall be provided at the Garrison and Central Maintenance areas. These garages shall contain 9 drive-through maintenance bays with overhead doors (5mx4m) at both ends of each bay as well as adequate concrete apron. The maintenance buildings shall have storage areas, office areas and tool rooms. Provide pits w/steps in 2 bays, on each side. They will have a 2-ton and 10-ton overhead bridge crane that can traverse the entire length of all maintenance bays. One each welding hood tailpipe CO exhaust system with hose reel and waste oil collection system to be provided for each of the two sides of the maintenance garage. The CS and CSS Company Maintenance Building shall be a similar floor plan with a reduced building size. CS and CSS Maintenance garage will have 3 drive-through maintenance bays with one two ton crane. Provide pits w/steps. Maintenance garages shall include exhausted battery storage/maintenance rooms in the garage. Provide two bollards at each roll-up door jamb. Reference the drawings attached.

d. POL storage buildings, minimum size 25 m^2. Each POL storage building shall have two rooms.

4.7 Brigade Headquarters Buildings

The designs for the following buildings should consider co-location of the Brigade and HQ buildings and should take into consideration the future expansion of the HQ building.

The following space requirements shall apply to the Brigade Headquarters Buildings:

Brigade Headquarters Building

Type of Space	Quantity	Area(m^2)	Total(m^2)
Open Office Spaces	N/A	351	351
Private Office	2	10	20
Private Office	7	14	98
Private Office	1	15	15
Private Office	1	28	28
Conference Room	1	40	40
Total Office Space			552

4.9 Installation Communication Systems

This facility will serve as the installation's center for telecommunications, switching, and automation networking (including internet service). See 01015, section 10.

4.10 Foundations

All building shall have reinforced concrete slab with reinforced concrete foundation 800 mm minimum or below the frost line.

4.11 Prime Power Plant Fuel

The prime power plant shall include bulk fuel storage capacity based on four weeks full-load operation for current capacity on design with provision to accommodate fuel storage for 2 additional generators. Provide refueling point adjacent to exterior stone wall and near a guard tower so tanker truck does not have to enter the Base. Provide a road with truck turn-around at fueling point.

PART 2 - PRODUCTS

2.1 DRAWINGS AND OTHER DATA TO BECOME PROPERTY OF THE GOVERNMENT
All designs, drawings, specifications, notes, and other works developed in the performance of this contract shall become the sole property of the Government and may be used on any other design without additional compensation to the Contractor. The Government shall be considered the "person for whom the work was prepared" for the purpose of authorship in a copyrightable work under 17 U.S.C. 201(b). With respect thereto, the Contractor agrees not to assert or authorize others to assert any rights or to establish any claim under the design patent or copyright laws. The Contractor for a period of three (3) years after completion of the project agrees to furnish all retained works on the request of the Contracting Officer. Unless otherwise provided in the contract, the Contractor shall have the right to retain copies of all works beyond such period.

PART 3 – EXECUTION

3.1 SCHEDULE

Review Section 00150 for Schedule requirements. The development of the master plan and conceptual plans will include participation in a 2 to 5-day Planning Charette meeting at the 10% to 15% design effort in Kabul to finalize design. The Charette shall consist of the Customer, Contractor, Design Team and U.S.

Army Corps of Engineers personnel to finalize design Completion of construction documents for 100%, After approval of a preliminary facility layout and landscape plan, the Contractor may commence Site Work. Any Options to be awarded shall be awarded no later than 200 calendar days after the Notice to Proceed (NTP). Contractor will prosecute the work diligently, and complete the entire work, ready for use, no later than 450 calendar days after Notice to Proceed. See Table 1.1 for completion dates for individual buildings and groups of buildings. The time stated for completion shall include final cleanup of the premises. The Contractor shall survey site and verify the existing conditions and report to the Contracting Officer any interface problems that could potentially impact this work. The Contractor shall be responsible for submittals and developing and performing all operational and acceptance testing. Contractor shall construct the facilities as a Design-Build construction contract and shall be in accordance with all codes, regulations, and requirements outlined in this Request for Proposal (RFP).

- End of Section –

(End of Summary of Changes)